

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2004-0050

NPDES NO. CA0077747

WASTE DISCHARGE REQUIREMENTS
FOR
CHESTER PUBLIC UTILITY DISTRICT
CHESTER SEWAGE TREATMENT PLANT
PLUMAS COUNTY

The California Regional Water Quality Control Board, Central Valley Region, (hereafter Regional Board) finds that:

1. The Chester Public Utility District (hereafter Discharger) submitted a Report of Waste Discharge, dated 28 June 2002, and applied for a permit renewal to discharge waste under the National Pollutant Discharge Elimination System (NPDES) from the Chester Sewage Treatment Plant.
2. The Discharger owns and operates a wastewater collection, treatment, and disposal system, and provides sewerage service for the community of Chester, Plumas County. The treatment plant is in Section 8, T28N, R7E, MDB&M, as shown on Attachment A, a part of this Order. The discharge is within Lake Almanor Hydrologic Subarea No. 518.41 as depicted on interagency hydrologic maps prepared by the Department of Water Resources in August 1986. Treated municipal wastewater is discharged seasonally through a surface ditch to Lake Almanor, a water of the United States, at a point designated by latitude 40° 17' 48" north and longitude 121° 13' 15" west. Discharge to Lake Almanor is allowed during the nonrecreational season from 1 October through 30 May. During the recreational season, 1 June through 30 September, treated wastewater is stored in ponds.
3. The treatment plant consists of a headworks, 16 acres of facultative ponds, and a chlorination facility. Treated and disinfected wastewater is discharged from the facultative ponds to a series of three wetlands ponds, or during the non-recreation season, from the facultative ponds to Lake Almanor (Discharge 001) on an as-needed basis. On two occasions, small amounts of sludge have been removed from the primary ponds. The sludge is currently being stored at the facility. This Order requires the Discharger to submit a sludge disposal plan.
4. The Report of Waste Discharge describes the existing discharge as follows:

Average Flow:	0.43 million gallons per day (mgd)
Maximum Design Flow:	0.75 mgd
Daily Peak Wet Weather Flow:	1.9 mgd

<u>Constituent</u>	<u>mg/L</u>	<u>lbs/day</u>
BOD ¹	25	95
Total Suspended Solids	17	63

¹ 5-day, 20°C biochemical oxygen demand

The discharge must currently meet a BOD effluent limitation of 30 mg/L as a monthly average and 45 mg/L as a weekly average when discharging to the receiving water. There are no BOD effluent limitations for discharges to land. The current BOD effluent limitations are based on the federal secondary treatment regulation found in Title 40, Code of Federal Regulations (CFR), Part 133. Average monthly BOD results over the last two years exceeded the monthly average BOD effluent limitation of 30 mg/L for 12 out of 14 times during the non-recreation season. Similar exceedances of the weekly BOD effluent limitations occurred. Had there been discharges to the receiving water over this 2-year period (none were reported), such discharges may have been in violation of the BOD effluent limitations. In June 2003, a BOD study was conducted over a three-week period. Weekly influent and effluent samples were collected. Each sample was analyzed by three laboratories: the Discharger's certified contract laboratory and two other certified laboratories agreed upon by the Discharger and Regional Board staff. The Discharger's contract laboratory reported influent and effluent BOD concentrations which were 40 to 264 percent higher than the other laboratories used in the study. The two other laboratories' results were in close agreement. The BOD concentration and mass loading shown in the above table are estimates based on the June 2003 study and indicate the Discharger is able to meet the secondary treatment standard for BOD.

5. The Discharger has experienced excessive inflow and infiltration (I/I) into its collection system for many years. On 28 April 1989, the Regional Board adopted Cease and Desist Order (CDO) No. 89-069 for violation of requirements due to excessive I/I. The Discharger has established an I/I program to inspect, test, and repair the old collection system. Order No. 89-069 does not reflect current conditions. Since Order No. 89-069 was adopted, the Discharger has, with the assistance of grant funds, replaced about one mile (10 percent) of the collection system and has increased storage and disposal capacity by constructing two additional wetlands ponds for disposal, for a total of three wetlands ponds. Since the improvements have been made, no discharges to Lake Almanor have occurred during the recreation season. Another CDO has been drafted to reflect the progress that has been made and to identify unfinished tasks. The draft CDO contains a schedule for continued replacement of the collection system and a requirement for annual written progress updates. The Discharger estimates that at the current rate of replacement, one mile every other year, it will take approximately twenty years to replace the entire collection system. To achieve this rate of replacement, the Discharger has increased user fees.
6. The discharge is currently governed by Order No. 97-239, adopted by the Regional Board on 5 December 1997. A previous order, Order No. 87-064 adopted 24 April 1987, has remained in full effect in support of the CDO. This draft permit contains language to rescind Order No. 87-064.
7. The U.S. Environmental Protection Agency (USEPA) and the Regional Board have classified this discharge as a minor discharge.

8. Federal Regulations for storm water discharges were promulgated by USEPA on 16 November 1990 (40 CFR Parts 122, 123, and 124) which require specific categories of facilities discharging storm water associated with industrial activity to obtain NPDES permits and to implement Best Available Technology Economically Achievable and Best Conventional Pollutant Control Technology to reduce or eliminate industrial storm water pollution.
9. The State Water Resources Control Board (SWRCB) adopted Order No. 97-03-DWQ (General Permit No. CAS000001), on 17 April 1997, specifying waste discharge requirements for discharge of storm water associated with industrial activities, excluding construction activities, and requiring submittal of a Notice of Intent (NOI) by industries to be covered by the permit. This facility is not subject to the General Permit or industrial storm water regulations because the discharge is less than 1.0 mgd.
10. The Regional Board adopted a *Water Quality Control Plan, Fourth Edition, for the Sacramento River and the San Joaquin River Basins* (hereafter Basin Plan). The Basin Plan designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters of the Basin. These requirements implement the Basin Plan.
11. The USEPA adopted the *National Toxics Rule (NTR)* on 5 February 1993 and the *California Toxics Rule (CTR)* on 18 May 2000. The NTR and CTR water quality standards are applicable to this discharge. The SWRCB, on 26 April 2000, adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (known as the State Implementation Policy or SIP) which contains guidance on implementation of the NTR and CTR.
12. The beneficial uses of Lake Almanor as identified in Table II-1 of the Basin Plan are hydropower generation; water contact recreation; warm freshwater habitat; cold freshwater habitat; spawning, reproduction and/or early development of fish; and wildlife habitat.
13. The beneficial uses of underlying groundwater are municipal and domestic supply, agricultural supply, industrial service supply, and industrial process supply.
14. Effluent limitations and toxic and pretreatment effluent standards established pursuant to Sections 301 (Effluent Limitations), 302 (Water Quality Related Effluent Limitations), 304 (Information and Guidelines), and 307 (Toxic and Pretreatment Effluent Standards) of the *Clean Water Act (CWA)* and amendments thereto are applicable to the discharge.
15. The Discharger was issued a letter under authority of Water Code Section 13267 on 8 December 2000, requesting that effluent and receiving water be monitored in accordance with the State Implementation Policy.
16. Federal regulations require effluent limitations for all pollutants that are or may be discharged at a level that will cause or have the reasonable potential to cause, or contribute to an in-stream excursion above a narrative or numerical water quality standard. Based on information submitted as part of the application, in studies, and as directed by monitoring and reporting programs, the

Regional Board finds that the discharge does have a reasonable potential to cause or contribute to an in-stream excursion above a water quality objective for chlorine, copper, coliform, and pH.

17. Section 13263.6(a), Water Code, requires that “the regional board shall prescribe effluent limitations as part of the waste discharge requirements of a POTW for all substances that the most recent toxic chemical release data reported to the state emergency response commission pursuant to Section 313 of the Emergency Planning and Community Right to Know Act of 1986 (42 U.S.C. Sec. 11023) [EPCRA] indicate as discharged into the POTW, for which the state board or the regional board has established numeric water quality objectives, and has determined that the discharge is or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to, an excursion above any numeric water quality objective.”
18. A search of the EPCRA Toxic Release Inventory database, maintained by USEPA, found no toxic chemicals for which the Basin Plan has numeric water quality objectives, being discharged to the Chester sewage treatment plant. The Regional Board has adopted numeric water quality objectives in the Basin Plan for certain constituents in specific reaches of the Sacramento River and, above the Highway 32 crossing, its tributaries. Lake Almanor is in the Feather River watershed which discharges to the Sacramento River below the Highway 32 crossing. There is no numeric water in the Basin Plan applicable to Lake Almanor. Therefore, effluent limitations based on EPCRA and Water Code Section 13263.6(a) are not proposed for this discharge.
19. Total Residual Chlorine - The Basin Plan prohibits the discharge of toxic materials in toxic concentrations. Chlorine is commonly used as a disinfection agent in the treatment of wastewater. Proper disinfection ensures destruction of pathogens prior to discharge to the surface waters. The Discharger uses chlorine for disinfection of the wastewater at the treatment plant. Because chlorine poses a threat to human health and is especially harmful to organisms living in water, dechlorination is necessary. The Discharger does not yet have dechlorination equipment. This Order requires that the Discharger obtain and operate dechlorination equipment. Inadequate dechlorination may result in the discharge of chlorine to the receiving water and cause toxicity to aquatic life. The Basin Plan prohibits the discharge of toxic substances in toxic concentrations.

USEPA has developed Ambient Water Quality Criteria for the protection of freshwater aquatic life. The recommended maximum one-hour average and four-day average concentrations for total residual chlorine are 0.02 mg/L and 0.01 mg/L, respectively. Final effluent limitations for total residual chlorine are included in this Order and are based on the Basin Plan narrative toxicity objective. The existing Order includes a chlorine residual daily maximum effluent limitation of 0.1 mg/L. This Order gives the Discharger until 1 October 2005 to comply with final effluent limitations.
20. Pathogens - Water contact recreation is a beneficial use of Lake Almanor and, to protect it, this Order contains the following:
 - a. A prohibition on discharges to Lake Almanor during the recreation season, from 1 June to 30 September.
 - b. Effluent limitations for total coliform organisms.
 - c. Receiving water limitations for fecal coliform organisms per the Basin Plan.

21. **pH** - The Basin Plan includes numeric water quality objectives that the pH “...not be depressed below 6.5 nor raised above 8.5. Changes in normal ambient pH levels shall not exceed 0.5 in fresh waters with designated COLD or WARM beneficial uses.” Lake Almanor is designated as having both COLD and WARM beneficial uses. Effluent Limitations for pH included in this Order and are based on “The Secondary Treatment Regulation” (40 CFR Section 133.102(c)) and are considered adequately protective of Basin Plan objectives for pH.
22. **Priority Pollutants** - In February and May 2001, June 2002, and May 2003, the Discharger collected effluent and receiving water samples and had them analyzed for priority pollutants in accordance with the State Implementation Policy. Minimum levels and method detection limits were found to be acceptable. With the exception of copper, all priority pollutants were either below their respective method detection limits or below applicable water quality standards.
23. Reasonable potential is defined as an effluent concentration exceeding an applicable water quality objective (criterion). Based on the analytical data presented below for total copper, submitted by the Discharger, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criteria for copper:

<u>Sample Date</u>	<u>Units</u>	<u>Effluent</u>	<u>Receiving Water</u>
27 February 2001	µg/L	25	not tested
29 May 2001	µg/L	8	<0.09
17 June 2002	µg/L	not tested	0.8
29 May 2003	µg/L	8.7	0.44

According to SIP Section 1.3, effluent limitations must be established when a reasonable potential exists for a constituent to cause or contribute to an excursion above a numeric water quality objective. The CTR includes hardness-dependent criteria for the protection of freshwater aquatic life for copper. Freshwater aquatic habitat is a beneficial use of the receiving water. The criteria for copper are presented in dissolved concentrations. The USEPA recommends conversion factors to translate dissolved concentrations to total concentrations. The conversion factors for copper in freshwater are 0.960 for both the acute and the chronic criteria. The CTR water quality criteria for copper (based on a hardness of 39 mg/L) are (expressed as total copper):

- Freshwater Criteria: maximum concentration = 5.8 µg/L; continuous concentration = 4.2 µg/L
- Human Health Criterion for Consumption of Water and Organisms = 1,300 µg/L

24. To determine if an effluent limitation for copper is required, SIP Section 1.3 requires that the lowest freshwater criterion, 4.2 µg/L in this case, be compared to the maximum effluent concentration, which is 25 µg/L. Since the maximum effluent concentration exceeds the lowest freshwater criterion, an effluent limitation for copper must be established.

Section 1.4 of the SIP establishes procedures for calculating effluent limitations. Included in the procedures is determination of a dilution credit, which the Regional Board may approve, disapprove, or modify at its discretion. But the Discharger has not developed the information

needed to determine a dilution credit. Consequently, this Order establishes final effluent limitations for copper based on zero dilution. The final effluent limitations are calculated as shown in the Information Sheet, a part of this Order. For the minimum receiving water hardness observed by the Discharger, 39 mg/L, the maximum daily effluent limitation is 5.7 µg/L and the average monthly effluent limitation is 2.9 µg/L. Attachment B, a part of this Order, presents the final effluent limitations adjusted for receiving water hardness.

25. Based on past sampling, the Discharger cannot meet the final effluent limitation contained in this Order. Section 2.1 of the SIP provides that: *“Based on an existing discharger’s request and demonstration that it is infeasible for the discharger to achieve immediate compliance with a CTR criterion, or with an effluent limitation based on a CTR criterion, the RWQCB may establish a compliance schedule in an NPDES permit.”* Section 2.1, further states that compliance schedules may be included in NPDES permits provided that the following information has been submitted: *... “(a) documentation that diligent efforts have been made to quantify pollutant levels in the discharge and the sources of the pollutant in the waste stream; (b) documentation of source control measures and/or pollution minimization measures efforts currently underway or completed; (c) a proposal for additional or future source control measures, pollutant minimization actions, or waste treatment (i.e., facility upgrades); and (d) a demonstration that the proposed schedule is as short as practicable.”* This Order requires the Discharger to provide the above information.

26. The compliance schedule gives the Discharger until 60 months after adoption of this Order (the entire permit period) to achieve compliance with the final effluent limitation for copper or to justify another final effluent limitation to be incorporated upon renewal of the permit. Because the compliance schedule exceeds one year, the SIP requires interim effluent limitations (Section 2.1). This Order therefore establishes interim effluent limitations for copper effective upon adoption of the Order. The SIP, Section 2.2.1, states that interim effluent limitations must be based on *“... current treatment facility performance or on existing permit limitations, whichever is more stringent.”* Because there is no existing effluent limitation on copper, the interim effluent limitations are based on current treatment facility performance. In developing the interim limitation, when there are less than ten sampling data points available, the *Technical Support Document for Water Quality Based Toxics Control* ((EPA/505/2-90-001), or TSD, recommends a coefficient of variation of 0.6 be utilized as representative of wastewater effluent sampling. The TSD recognizes that a minimum of ten data points is necessary to conduct a valid statistical analysis. The multipliers contained in Table 5-2 of the TSD are used to determine a maximum daily limitation based on a long-term average objective. In this case, the long-term average objective is to maintain, at a minimum, the current plant performance level. Therefore, when there are less than ten sampling points for a constituent, interim limitations are based on 3.11 times the maximum observed sampling point to obtain the daily maximum interim limitation (*TSD, Table 5-2*). The monthly average interim limitation is established as the maximum observed sampling point. Interim limitations are established when compliance with NTR- and CTR-based Effluent Limitations cannot be achieved by the existing discharge. Discharge of constituents in concentrations in excess of the final effluent limitations, but in compliance with the interim effluent limitations, can significantly degrade water quality and adversely affect the beneficial uses of the receiving stream on a long-term basis. For example, U.S. EPA states in the Ambient

Water Quality Criteria for the Protection of Freshwater Aquatic Life for copper, that it will take an unstressed system approximately three years to recover from a pollutant in which exposure to copper exceeds the recommended criterion. The interim effluent limitations, however, establish an enforceable ceiling concentration until compliance with the final effluent limitation can be achieved.

27. The permitted surface water discharge is consistent with the antidegradation provisions of 40 CFR 131.12 and SWRCB Resolution 68-16. Compliance with these requirements will result in the use of best practicable treatment or control of the discharge. The impact on existing water quality will be insignificant.
28. The action to adopt an NPDES permit is exempt from the provisions of Chapter 3 of the California Environmental Quality Act (CEQA) (Public Resources Code Section 21100, et seq.), in accordance with Section 13389 of the Water Code.
29. All the above and the supplemental information and details in the attached Information Sheet, which is incorporated by reference herein, were considered in establishing the following conditions of discharge.
30. The Discharger and interested agencies and persons were notified of the intent to prescribe waste discharge requirements for this discharge, and were provided an opportunity to submit written views and recommendations and to be heard in a public meeting.
31. In a public meeting, all comments pertaining to the discharge were heard and considered.
32. This Order shall serve as an NPDES permit pursuant to Section 402 of the CWA, and amendments thereto, and shall take effect upon the date of hearing, provided USEPA has no objections.

IT IS HEREBY ORDERED that Order Nos. 87-064, 89-069, and 97-239 are rescinded and the Chester Public Utility District, its agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the Water Code and regulations adopted thereunder, and the provisions of the CWA and regulations and guidelines adopted thereunder, shall comply with the following:

A. Discharge Prohibitions

1. The discharge of treated wastewater at a location or in a manner different from that described in the Findings is prohibited.
2. The discharge of effluent to Lake Almanor during the recreational season, 1 June through 30 September, is prohibited.
3. The by-pass of the disinfection system is prohibited.
4. Discharge from the wetland ponds to surface waters is prohibited.

5. The by-pass or overflow of wastes from any part of the treatment plant including the collection system to surface waters is prohibited, except as allowed by Standard Provision A.13. (See attached *Standard Provisions and Reporting Requirements for Waste Discharge Requirements (NPDES)*).
6. The discharge of wastes, other than stormwater, that are not otherwise permitted by this Order to surface waters or surface water drainage courses is prohibited.
7. The discharge of wastes classified a “hazardous” as defined in Section 2521(a) of Title 23, California Code of Regulations (CCR), Section 2510, et seq., or “designated” as defined in Section 13173 of the Water Code, is prohibited.

B. Effluent Limitations (Surface Water)

1. Effluent discharged to surface waters (Discharge 001) shall not exceed the following:

<u>Constituents</u>	<u>Units</u>	<u>Monthly Average</u>	<u>Weekly Average</u>	<u>Monthly Median</u>	<u>4-day Average</u>	<u>Daily Maximum</u>
BOD ¹	mg/L	30 ²	45 ²	--	--	90 ²
	lbs/day ³	188	282	--	--	563
Total Suspended Solids	mg/L	30 ²	45 ²	--	--	90 ²
	lbs/day ³	188	282	--	--	563
Total Residual Chlorine	mg/L	--	--	--		0.1 ⁴
Total Residual Chlorine	mg/L	--	--	--	0.01 ⁵	0.02 ⁴
Copper (total recoverable) ⁶	µg/L	Must calculate ^{7,8}	--	--	--	Must calculate ^{7,8}
	lbs/day ³					
Total Coliform Organisms	MPN/100 mL	--	--	23	--	500

¹ 5-day, 20°C biochemical oxygen demand.

² To be determined by a 24-hour composite.

³ Based on a design treatment capacity of 0.75 mgd.

⁴ The Discharger shall comply with a total chlorine residual of 0.1mg/L daily maximum until 1 October 2005. After 1 October 2005, the Discharger shall comply with a daily maximum of 0.02 mg/L for discreet samples analyzed in the laboratory or a 1-hour average of 0.02 mg/L from a continuous monitoring system.

⁵ After 1 October 2005, the Discharger shall comply with a total chlorine residual 4-day average of 0.01 mg/L.

⁶ These limitations shall take effect on 1 January 2005 unless the Discharger submits a compliance schedule pursuant to Provision H.6.

⁷ Calculate limitation based on Attachment B

⁸ Mass limitations based on design treatment capacity of 0.75 mgd and limitations calculated in Attachment B.

2. Effluent shall not exceed the following interim limitations, per Provision H.6:

<u>Constituents</u>	<u>Units</u>	<u>Monthly Average</u>	<u>Daily Maximum</u>
Copper (total recoverable)	µg/L	25	78
	lbs/day ¹	0.16	0.49

¹ Based on a design treatment capacity of 0.75 mgd.

3. The arithmetic mean BOD, in effluent samples collected over a monthly period shall not exceed 15 percent of the arithmetic mean of the values for influent samples collected at approximately the same times during the same period (85 percent removal).
4. The arithmetic mean total suspended solids in effluent samples collected over a monthly period shall not exceed 35 percent of the arithmetic mean of the values for influent samples collected at approximately the same times during the same period (65 percent removal).
5. The discharge shall not have a pH less than 6.0 nor greater than 9.0.
6. The 30-day average daily dry weather influent flow shall not exceed 0.75 million gallons.
7. Survival of aquatic organisms in 96-hour bioassays of undiluted waste shall be no less than:
 Minimum for any one bioassay - - - - - 70%
 Median for any three or more consecutive bioassays - - - - 90%

C. Discharge Specifications (Facultative and Wetland Ponds)

1. Objectionable odors originating at this facility shall not be perceivable beyond the limits of the wastewater treatment and disposal areas.
2. As a means of discerning compliance with Discharge Specification No. 1, the dissolved oxygen content in the upper zone (1 foot) of wastewater in ponds shall not be less than 1.0 mg/L.
3. Effluent discharged to the wetland ponds shall not exceed the following:

<u>Constituents</u>	<u>Units</u>	<u>Monthly Median</u>	<u>Daily Maximum</u>
Total Coliform Organisms	MPN/100 mL	23	500

4. Facultative ponds shall be managed to maintain the integrity of pond embankments and to prevent breeding of mosquitoes. In particular:

- a. An erosion control program should assure that small coves and irregularities are not created around the perimeter of the water surface.
- b. Weeds shall be minimized.
- c. Dead algae, vegetation, and debris shall not accumulate on the water surface.

Alternative methods to mosquito control may be allowed at the discretion of the Executive Officer.

5. The Discharger shall maintain a minimum two feet of freeboard in the facultative ponds at all times. The facultative ponds in combination with the wetland ponds shall have sufficient capacity to accommodate allowable wastewater flow and design seasonal precipitation and ancillary I/I during the recreation season (1 June through 30 September). Design seasonal precipitation shall be based on total annual precipitation using a return period of 25 years, distributed monthly in accordance with historical rainfall patterns.
6. Public contact with wastewater shall be precluded to the extent practicable through such means as fences, signs, and other acceptable alternatives.
7. Discharge to facultative or wetland ponds shall not cause degradation of any water supply.

D. Sludge Disposal Specifications

1. Collected screenings, sludges, and other solids removed from liquid wastes shall be disposed of in a manner approved by the Executive Officer and consistent with *Consolidated Regulations for Treatment, Storage, Processing, or Disposal of Solid Waste*, as set forth in Title 27, CCR, Division 2, Subdivision 1, Section 20005, et seq.
2. Any proposed change in sludge use or disposal practice from a previously approved practice shall be reported to the Executive Officer and USEPA Regional Administrator at least **90 days** in advance of the change.
3. Use and disposal of sewage sludge shall comply with existing Federal and State laws and regulations, including permitting requirements and technical standards included in 40 CFR 503. If the SWRCB and the Regional Water Quality Control Boards are given the authority to implement regulations contained in 40 CFR 503, this Order may be reopened to incorporate appropriate time schedules and technical standards. The Discharger must comply with the standards and time schedules contained in 40 CFR 503 whether or not they have been incorporated into this Order.
4. **By 1 September 2004**, the Discharger shall submit a sludge disposal plan describing the volume of sludge generated by the plant and specifying the disposal practices.

E. Receiving Water Limitations

Receiving Water Limitations are based upon water quality objectives contained in the Basin Plan. As such, they are a required part of this Order.

The discharge shall not cause the following in Lake Almanor:

1. Concentrations of dissolved oxygen to fall below 7.0 mg/L. The monthly median of the mean daily dissolved oxygen concentration shall not fall below 85 percent of saturation in the main water mass, and the 95th percentile concentration shall not fall below 75 percent of saturation.
2. Oils, greases, waxes, or other materials to form a visible film or coating on the water surface or on the stream bottom.
3. Oils, greases, waxes, floating material (liquids, solids, foams, and scums), or suspended material to create a nuisance or adversely affect beneficial uses.
4. Total residual chlorine to be detected in the receiving water in concentrations equal to or greater than 0.01 mg/L.
5. Aesthetically undesirable discoloration.
6. Fungi, slimes, or other objectionable growths.
7. The turbidity of receiving water to increase over background levels more than:
 - a. 1 Nephelometric Turbidity Units (NTUs) where natural turbidity is between 0 and 5 NTUs.
 - b. 20 percent where natural turbidity is between 5 and 50 NTUs.
 - c. 10 NTUs where natural turbidity is between 50 and 100 NTUs.
 - d. 10 percent where natural turbidity is greater than 100 NTUs.

In determining compliance with the above limitations, appropriate averaging periods may be applied upon approval by the Executive Officer.

8. The ambient pH to fall below 6.5, exceed 8.5, or change by more than 0.5 units.

In determining compliance with the above limitations, appropriate averaging periods may be applied upon approval by the Executive Officer.

9. Deposition of material that causes nuisance or adversely affects beneficial uses.
10. The ambient temperature to increase more than 5°F (3°C).
11. Aquatic communities and populations, including vertebrate, invertebrate, and plant species, to be degraded.

12. Taste or odor-producing substances to impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin, or to cause nuisance or adversely affect beneficial uses.
13. The fecal coliform concentration in any 30-day period to exceed a geometric mean of 200 MPN/100 mL or cause more than 10 percent of total samples to exceed 400 MPN/100 mL.
14. Toxic pollutants to be present in the water column, sediments, or biota in concentrations that adversely affect beneficial uses; that produce detrimental response in human, plant, animal, or aquatic life; or that bioaccumulate in aquatic resources at levels which are harmful to human health.
15. Violations of any applicable water quality standard for receiving waters adopted by the Regional Board or the SWRCB pursuant to the CWA and regulations adopted thereunder.

F. Groundwater Limitations

Release of waste constituents from any storage, treatment, or disposal component associated with the facility shall not, in combination with other sources of the waste constituents, cause the following in groundwater:

1. Beneficial uses to be adversely impacted or water quality objectives to be exceeded.
2. Any constituent concentration, when compared with background, to be incrementally increased beyond the current concentration.

G. Pretreatment Provisions

1. The Discharger shall implement, as more completely set forth in 40 CFR 403.5, the necessary legal authorities, programs, and controls to ensure that the following incompatible wastes are not introduced to the treatment system, where incompatible wastes are:
 - a. Wastes which create a fire or explosion hazard in the treatment works;
 - b. Wastes which will cause corrosive structural damage to treatment works, but in no case wastes with a pH lower than 5.0, unless the works is specially designed to accommodate such wastes;
 - c. Solid or viscous wastes in amounts which cause obstruction to flow in sewers, or which cause other interference with proper operation or treatment works;
 - d. Any waste, including oxygen demanding pollutants (BOD, etc.), released in such volume or strength as to cause inhibition or disruption in the treatment works, and subsequent treatment process upset and loss of treatment efficiency;

- e. Heat in amounts that inhibit or disrupt biological activity in the treatment works, or that raise influent temperatures above 40°C (104°F), unless the Regional Board approves alternate temperature limitations;
 - f. Petroleum oil, non-biodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference or pass through;
 - g. Pollutants which result in the presence of toxic gases, vapors, or fumes within the treatment works in a quantity that may cause acute worker health and safety problems; and
 - h. Any trucked or hauled pollutants, except at points predesignated by the Discharger.
2. The Discharger shall implement, as more completely set forth in 40 CFR 403.5, the legal authorities, programs, and controls necessary to ensure that indirect discharges do not introduce pollutants into the sewage system that, either alone or in conjunction with a discharge or discharges from other sources:
 - a. Flow through the system to the receiving water in quantities or concentrations that cause a violation of this Order; or
 - b. Inhibit or disrupt treatment processes, treatment system operations, or sludge processes, use, or disposal and either cause a violation of this Order or prevent sludge use or disposal in accordance with this Order.
 3. The Discharger shall notify industrial users subject to the Categorical Pretreatment Standards under 40 CFR 403.6 and 40 CFR Chapter I, Subchapter N, of their discharge effluent limitations. These limitations must be at least as stringent as the pretreatment standards contained in the applicable federal category. If the Discharger can show cause, the Discharger may develop more stringent technically based limitations. The Discharger shall notify the Regional Board if an industrial user violates its discharge effluent limitations.

H. Provisions

1. The Discharger shall continue to implement an I/I program to reduce the inflow of surface waters and infiltration of groundwaters into the collection system.
2. The Discharger shall submit to the Regional Board **by 1 January of each year** a report describing steps taken during the previous year to reduce I/I into the collection system.
3. The Discharger shall not allow pollutant-free wastewater to be discharged into the collection, treatment, and disposal system in amounts that significantly diminish the system's capability to comply with this Order. Pollutant-free wastewater means storm water, snowmelt, groundwater, cooling waters, condensates, and other wastes that are essentially free of pollutants.

4. The Discharger shall comply with Monitoring and Reporting Program No. R5-2004-0050, which is a part of this Order, and any revisions thereto as ordered by the Executive Officer.

When requested by USEPA, the Discharger shall complete and submit Discharge Monitoring Reports. The submittal date shall be no later than the submittal date specified in the Monitoring and Reporting Program for discharger self-monitoring reports.

5. The Discharger shall conduct the chronic toxicity testing specified in Monitoring and Reporting Program No. R5-2004-0050. If the testing indicates that the discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above the water quality objective for toxicity, the Discharger shall initiate a Toxicity Identification Evaluation (TIE) to identify causes of the toxicity. Upon completion of the TIE, the Discharger shall submit a work plan to conduct a Toxicity Reduction Evaluation (TRE), and after Regional Board evaluation conduct the TRE. This Order will be reopened to include a chronic toxicity limitation and/or a limitation for the specific toxicant identified in the TRE. Additionally, if a chronic toxicity water quality objective is adopted by the SWRCB, this Order may be reopened and a limitation based on that objective included.
6. **Final Copper Effluent Limitations - Compliance Schedule:** By **1 November 2004**, the Discharger shall complete and submit a complete compliance schedule justification for copper as described in the Findings. The compliance schedule justification shall include all items specified by the SIP Section 2.1, Paragraph 3 (items (a) through (d)). If a complete compliance schedule justification meeting the requirements of Section 2.1 of the SIP is not submitted by the Discharger, the final effluent limitations for copper become effective **1 January 2005**. If an acceptable compliance schedule justification is submitted, the interim effluent limitations described in this Order for copper will supercede the final effluent limitations until **60 months** after adoption of this Order. At that time the final effluent limitations will be fully applicable. As this compliance schedule is greater than one year, the Discharger shall submit semi-annual reports on **15 January and 15 July** of each year until the Discharger achieves compliance with the final effluent limitations for copper.
7. Within **12 months** of adoption of this Order, the Discharger shall either (1) submit a workplan for reducing the concentrations of pollutants in the discharge to levels that will comply with the final effluent limitations, or (2) submit a workplan(s) for studies that will prove that the final effluent limitations should be modified based on site-specific conditions. The Discharger must take such actions necessary to comply with the final effluent limitations. The Regional Board may reopen this Order and modify the final effluent limitations if appropriate, based on results of studies the Discharger may conduct.
8. By **1 October 2005**, the Discharger shall submit in writing verification that dechlorination equipment capable of meeting the effluent limitations for chlorine residual has been installed and is operational.
9. The Discharger shall use the best practicable cost-effective control technique currently available to limit mineralization to no more than a reasonable increment.

10. The Discharger shall comply with all the items of the *Standard Provisions and Reporting Requirements for Waste Discharge Requirements (NPDES)*, dated 1 March 1991, which are part of this Order. This attachment and its individual paragraphs are referred to as "Standard Provision(s)."
11. The treatment facilities shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.
12. The Discharger shall provide certified wastewater treatment plant operators in accordance with 23 CCR Section 3670.1.
13. The Discharger may be required to submit technical reports as directed by the Executive Officer.
14. This Order expires on **1 April 2009** and the Discharger must file a Report of Waste Discharge in accordance with Title 23, CCR, not later than **180 days** in advance of such date in application for renewal of waste discharge requirements if it wishes to continue the discharge.
15. In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to this office.

To assume operation under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the state of incorporation if a corporation, the address and telephone number of the persons responsible for contact with the Regional Board and a statement. The statement shall comply with the signatory paragraph of Standard Provision D.6 and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the Water Code. Transfer shall be approved or disapproved in writing by the Executive Officer.

I, THOMAS R. PINKOS, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 23 April 2004.

THOMAS R. PINKOS, Executive Officer

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2004-0050

NPDES NO. CA0077747

FOR
CHESTER PUBLIC UTILITY DISTRICT
CHESTER SEWAGE TREATMENT PLANT
PLUMAS COUNTY

The Discharger shall not implement any changes to this Program unless and until the Regional Board issues a revised Monitoring and Reporting Program.

INFLUENT MONITORING

Influent monitoring shall include at least the following:

<u>Constituents</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>
Flow	mgd	Meter	Continuous
20°C BOD ₅	mg/L, lbs/day	24 hr. Composite	Weekly
Total Suspended Solids	mg/L, lbs/day	24 hr. Composite	Weekly
Copper, total	µg/L	grab	Monthly

POND MONITORING

The Discharger shall record the following regarding the facultative and wetland ponds:

<u>Parameter</u>	<u>Unit</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>
Liquid Depth ¹	Feet	Visual	Weekly
Freeboard ¹	Feet	Visual	Weekly

¹ An alternative means of demonstrating compliance with Discharge Prohibition A.4., prohibition on discharge from wetland ponds to surface waters, may be requested. After review and approval in writing by the Executive Officer, the alternative means may be used.

In conducting the pond monitoring, a log shall be kept of the conditions of the ponds. The ponds shall be inspected on a regular basis. Attention shall be given to the following:

- a. Seepage through pond dikes
- b. Excessive odors or other nuisances
- c. Excessive weed growth in ponds

EFFLUENT MONITORING

Discharges to Wetland Ponds

Effluent monitoring for discharges to the wetland ponds shall include at least the following:

<u>Constituents</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>
Flow	Mgd	Meter	Continuous
Total Coliform Organisms	MPN/100 mL	Grab	Weekly

Discharges to Lake Almanor (Discharge 001)

The effluent monitoring described below shall be conducted whenever there is a discharge from the facultative ponds to Lake Almanor (Discharge 001). Effluent samples shall be collected at the outfall pipe or in the ditch between the outfall pipe and Lake Almanor. Effluent monitoring for discharges from the facultative ponds to Lake Almanor shall include at least the following:

<u>Constituents</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>
20°C BOD ₅	mg/L, lbs/day	Grab	Weekly
Total Suspended Solids	mg/L, lbs/day	Grab	Weekly
Total Residual Chlorine	mg/L	Grab	Twice Daily
Total Coliform Organisms	MPN/100 mL	Grab	Weekly
Temperature	°F	Grab	Weekly
pH	Standard Units	Grab	Weekly
Copper, total and dissolved	µg/L	Grab	Monthly
Acute Toxicity ^{1,2}	% Survival	Grab	Semi-annually
Ammonia ^{3,4}	mg/L	Grab	Semi-annually
Total Dissolved Solids	mg/L	Grab	Annually
Electrical Conductivity @25°C	µmhos/cm	Grab	Annually
Standard Minerals ⁵	mg/L	Grab	Annually
Priority Pollutants ⁶	mg/L	Grab	Once during life of this Order

¹ The acute bioassays samples shall be analyzed using EPA/600/4-90/027F, Fourth Edition, or later amendment with Regional Board staff approval. Temperature and pH shall be recorded at the time of

- bioassay sample collection. Test species shall be rainbow trout (*salmo gairdnerii*), with no pH adjustment unless approved by the Executive Officer.
- 2 Concurrent with ammonia sampling.
 - 3 Concurrent with acute biotoxicity monitoring.
 - 4 Report as both total and un-ionized ammonia.
 - 5 Standard minerals shall include major cations and anions (Na⁺, K⁺, Ca²⁺, Mg²⁺, Cl⁻, SO₄⁻, and HCO₃⁻/CO₃²⁻), total hardness, field pH, and a verification that the analysis is complete (i.e., cation/anion balance).
 - 6 If there is no discharge to the receiving water during at the time of sampling, the effluent priority pollutant monitoring sample shall be taken from the final facultative pond as close to the outlet as possible.

If the discharge is intermittent rather than continuous, then on the first day of the first such intermittent discharge the Discharger shall monitor and record data for all of the constituents listed above, except priority pollutants, after which the frequencies of analysis given in the schedule shall apply for the duration of each such intermittent discharge. The Discharger not be required to monitor and record data more often than twice the frequencies listed in the schedule unless directed to do so by the Executive Officer.

RECEIVING WATER MONITORING

Receiving water monitoring shall be conducted only when a discharge to Lake Almanor occurs. All receiving water samples shall be grab samples. Receiving water monitoring shall include at least the following:

<u>Station</u>	<u>Description</u>
R-1	Background sample from Lake Almanor, at least 500 feet from the ditch discharge point and between the discharge point and the mouth of the North Fork Feather River.
R-2	Downstream sample from Lake Almanor, no more than 500 feet from the ditch discharge point and between the discharge point and Canyon Dam.

<u>Constituents</u>	<u>Units</u>	<u>Station</u>	<u>Sampling Frequency</u>
Total Residual Chlorine	mg/L	R-2	Daily
Dissolved Oxygen	mg/L	R-1, R-2	Weekly
pH	Standard Units	R-1, R-2	Weekly
Turbidity	NTU	R-1, R-2	Weekly
Temperature	°F (°C)	R-1, R-2	Weekly
Electrical Conductivity @25°C	µmhos/cm	R-1, R-2	Weekly
Fecal Coliform Organisms	MPN/100 mL	R-1, R-2	Weekly

<u>Constituents</u>	<u>Units</u>	<u>Station</u>	<u>Sampling Frequency</u>
Copper, total and dissolved	µg/L	R-1, R-2	Monthly
Ammonia ¹	mg/L	R-1, R-2	Semi-annually
Un-ionized Ammonia as N (calculated)	mg/L	R-1, R-2	Semi-annually

¹ Temperature and pH shall be determined at the time of sample collection for the calculation of un-ionized ammonia.

In conducting the receiving water sampling, a log shall be kept of the receiving water conditions throughout the reach bounded by Stations R-1 and R-2. Attention shall be given to the presence or absence of:

- | | |
|---------------------------------|--|
| a. Floating or suspended matter | e. Visible films, sheens or coatings |
| b. Discoloration | f. Fungi, slimes, or objectionable growths |
| c. Bottom deposits | g. Potential nuisance conditions |
| d. Aquatic life | |

Notes on receiving water conditions shall be summarized in the monitoring report.

THREE SPECIES CHRONIC TOXICITY MONITORING

Chronic toxicity monitoring shall be conducted at the frequency specified below to determine whether the effluent is contributing toxicity to the receiving water. Chronic toxicity monitoring shall be conducted only if a discharge to the Lake Almanor occurs. The testing shall be conducted as specified in EPA 600/4-91/002 or most recent edition. Chronic toxicity samples shall be collected at the effluent monitoring point for Discharge 001. Grab samples, collected from or downstream of the facultative ponds, shall be considered adequately composited. Time of sample collection shall be recorded. Dilution and control waters shall be obtained immediately upstream of the discharge from an area unaffected by the discharge in the receiving waters. Standard dilution water can be used if the receiving water source exhibits toxicity and is approved by the Executive Officer. The sensitivity of the test organisms to a reference toxicant shall be determined concurrently with each bioassay and reported with the test results. Both the reference toxicant and effluent test must meet all test acceptability criteria as specified in the chronic manual. If the test acceptability criteria are not achieved, then the Discharger must re-sample and re-test within 14 days. Chronic toxicity monitoring shall include the following:

Species: Pimephales promelas, Ceriodaphnia dubia, and Selenastrum Capricornutum

Frequency: Once for the life of this Order

Dilution Series:

	<u>Dilutions (%)</u>					<u>Controls</u>	
	<u>100</u>	<u>50</u>	<u>25</u>	<u>12.5</u>	<u>6.25</u>	<u>Creek Water</u>	<u>Lab Water</u>
% WWTP Effluent	100	50	25	12.5	6.25	0	0
% Dilution Water*	0	50	75	87.5	93.75	100	0
% Lab Water	0	0	0	0	0	0	100

* Dilution water shall be receiving water from Lake Almanor in the vicinity of receiving water monitoring point R-1.

SLUDGE MONITORING

A composite sample(s) of sludge shall be collected **at least 60 days** prior to disposal in accordance with USEPA's POTW Sludge Sampling and Analysis Guidance Document, August 1989, and tested for *percent moisture* and the following metals:

Cadmium	Copper	Nickel
Chromium	Lead	Zinc

The quantity of sludge to be disposed of, in pounds (dry weight), and disposal location shall be included with the above sludge results.

Sampling records shall be retained for a minimum of five years. A log shall be kept of sludge quantities generated and of handling and disposal activities.

REPORTING

Monitoring results shall be submitted to the Regional Board by the **first day of the second month** following sample collection. Quarterly and annual monitoring results shall be submitted by the **first day of the second month following sample collection in each calendar quarter, semi-annual period, and year**, respectively.

In reporting the monitoring data, the Discharger shall arrange the data in tabular form so that the date, the constituents, and the concentrations are readily discernible. The data shall be summarized in such a manner to illustrate clearly whether the discharge complies with waste discharge requirements. The highest daily maximum for the month, monthly and weekly averages and medians, and removal efficiencies (%) for BOD and suspended solids, should be determined and recorded.

If the Discharger monitors any pollutant at the locations designated herein more frequently than is required by this Order, the results of such monitoring shall be included in the calculation and

reporting of the values required in the discharge monitoring report form. Such increased frequency shall be indicated on the discharge monitoring report form.

By **30 January** of each year, the Discharger shall submit a written report to the Executive Officer containing the following:

- a. The names, certificate grades, and general responsibilities of all persons employed at the WWTP (Standard Provision A.5).
- b. The names and telephone numbers of persons to contact regarding the plant for emergency and routine situations.
- c. A statement certifying when the flow meter and other monitoring instruments and devices were last calibrated, including identification of who performed the calibration (Standard Provision C.6).
- d. A statement certifying whether the current operation and maintenance manual, and contingency plan, reflect the wastewater treatment plant as currently constructed and operated, and the dates when these documents were last revised and last reviewed for adequacy.

The Discharger may also be requested to submit an annual report to the Regional Board with both tabular and graphical summaries of the monitoring data obtained during the previous year. Any such request shall be made in writing. The report shall discuss the compliance record. If violations have occurred, the report shall also discuss the corrective actions taken and planned to bring the discharge into full compliance with the waste discharge requirements.

All reports submitted in response to this Order shall comply with the signatory requirements of Standard Provision D.6.

The Discharger shall implement the above monitoring program on the first day of the month following effective date of this Order.

Ordered by: _____
THOMAS R. PINKOS, Executive Officer

(Date)

RB: sae
April 28, 2004

INFORMATION SHEET

ORDER NO. R5-2004-0050
CHESTER PUBLIC UTILITY DISTRICT
CHESTER SEWAGE TREATMENT PLANT
PLUMAS COUNTY

BACKGROUND INFORMATION

Chester Public Utility District (hereafter Discharger) collects and treats domestic wastewater originating from approximately 1,000 mostly residential connections in the town of Chester. Secondary treated and disinfected wastewater is discharged to wetland ponds or, from 1 October to 31 May, on an as-needed basis to Lake Almanor. The average design influent flow is 0.50 mgd, and the maximum design influent flow is 0.75 mgd. The wastewater treatment plant is immediately southeast of Chester near the northwest shore of Lake Almanor at an elevation of 4,500 feet MSL, in Section 8, T28N, R7E, MDB&M.

The existing wastewater treatment plant consists of a headworks, with a bar screen and a Parshall flume for measuring influent flow; six facultative ponds covering approximately 16 acres; a chlorine contact chamber; and a Parshall flume for measuring effluent flow. From 1 June to 30 September, treated and disinfected wastewater is discharged only to a series of three wetland ponds. The Order allows treated and disinfected wastewater to be discharged directly from the facultative ponds to Lake Almanor (Discharge 001) from 1 October to 31 May. Due in part to the increased disposal capacity provided by the wetland ponds, discharge to Lake Almanor has occurred infrequently in recent years.

The Discharger has approximately 11 miles of sewer collection lines with lift stations at Vision Lake, Martin Ranch, and 4th Avenue. The collection system has significant infiltration and inflow (I/I) problems dating to about the time it was built (1951). High groundwater and collection system defects, such as broken and settling pipes, leaking joints, and unsealed connections, are thought to be the cause of I/I. Based on the number of connections, influent flows to the wastewater treatment facility should be on the order of 0.30 mgd. However, flows have been known to exceed 1.5 mgd under exceptional I/I conditions.

The existing treatment facility was built in 1981 for year-round to discharge to Lake Almanor, which the permit in effect at that time allowed. When the NPDES permit was renewed in 1987, language was added prohibiting discharges to Lake Almanor during the "recreation season," from 1 June to 30 September. The discharge prohibition in combination with continuing I/I problems led to numerous violations, as the Discharger discharged wastewater to Lake Almanor during the recreation season to avoid overtopping the facultative ponds. Repeated violations resulted in the Regional Board adopting Cease and Desist Order No. 89-069 (CDO) requiring that Discharger take steps to reduce I/I.

CDO No. 89-069 no longer reflects facility conditions. Since the wetland ponds were built, no illegal discharges have occurred. The Discharger has raised user fees significantly to help pay for collection system replacement. About 10 percent of the collection system has been replaced and the remainder is scheduled for replacement over a 20-year period (approximately a mile every two years). To reflect current conditions, Regional Board staff have drafted a new CDO for the Regional Board's consideration. The draft CDO addresses the progress made to resolve I/I issues and includes a revised task schedule for addressing I/I.

RECEIVING WATER BENEFICIAL USES

The beneficial uses of Lake Almanor, as identified in Table II-1 of the Basin Plan, are hydropower generation; water contact recreation; warm freshwater habitat; cold freshwater habitat; spawning, reproduction and/or early development of fish; and wildlife habitat.

SWRCB RESOLUTION 68-16

Resolution 68-16 requires the Regional Board, in regulating the discharge of waste, to maintain high quality waters of the state unless it is demonstrated that any change in quality will be consistent with maximum benefit to the people of the State, will not unreasonably affect beneficial uses, and will not result in water quality less than that described in the Regional Board's policies (e.g., quality that exceeds water quality objectives). Resolution 68-16 applies to both surface water and groundwater. The Regional Board finds that discharge in compliance with the prohibitions, limitations, specifications, and provisions in this Order is consistent with Resolution 68-16. The impact on water quality will be insignificant.

CALIFORNIA TOXICS RULE (CTR) SAMPLING AND DETERMINATION OF REASONABLE POTENTIAL

Federal regulations contained in 40 CFR 122.4 (d) require effluent limitations for all pollutants that are or may be discharged at a level that will cause or have the reasonable potential to cause or contribute to an in-stream excursion above a narrative or numerical water quality standard. USEPA adopted the National Toxics Rule (NTR) on 5 February 1993 and the California Toxics Rule (CTR) on 18 May 2000. The NTR and CTR contain water quality standards applicable to this discharge. The State Water Resources Control Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (known as the State Implementation Plan or SIP), which contains guidance on implementation for the NTR and CTR.

On 8 December 2000, the Discharger was issued a letter under the authority of California Water Code Section 13267 requesting effluent and receiving water monitoring to perform a reasonable potential analysis to determine if pollutants are or may be discharged at a level that will cause or have the reasonable potential to cause, or contribute to an in-stream excursion above a narrative or numeric water quality standard.

In February 2001, May 2001, June 2002, and May 2003, the Discharger collected and analyzed effluent and receiving water samples for priority pollutants in accordance with the CTR and the SIP. Minimum levels and method detection limits were found to be acceptable. The first two tables below summarize CTR sampling results and applicable water quality criteria/objectives, respectively. The third and final table compares each maximum effluent concentration with the lowest corresponding water quality criterion to establish whether an effluent limitation is required per Section 1.3 of the SIP.

Summary of Positive CTR Sample Results¹

Constituent	Receiving Water				Effluent			
	2/27/01	5/29/01	6/17/02	5/29/03	2/27/01	5/29/01	6/17/02	5/29/03
<i><u>Inorganic:</u></i>								
pH	ns	8.34	8.72	7.4	6.77	7.21	ns	7.12
Hardness	ns	47	39	52	63.2	58	ns	45
Arsenic	ns	<0.26	1	1	<0.26	0.8	ns	1.6
Chromium (total)	ns	<0.05	0.2	<0.1	<0.05	<0.05	ns	<0.1
Copper	ns	<0.09	0.8	0.44	25	8	ns	8.7
Mercury	ns	0.0084	nt	0.00264	0.0141	0.0056	ns	0.0071
Selenium	ns	<0.35	0.3	<0.2	<0.35	<0.35	ns	0.2
Thallium	ns	<0.07	0.03	<0.01	<0.07	<0.07	ns	<0.01
Zinc	ns	4.9	8	0.9	6	9	ns	14
<i><u>Organic:</u></i>								
Chloroform	ns	<0.5	<0.5	<0.5	0.9	1.6	ns	0.5
Toluene	ns	<0.5	<0.5	<0.5	7	14.6	ns	32
1,4-Dichlorobenzene	ns	<0.5	<0.5	<0.5	0.6	<0.5	ns	<0.5
beta-BHC	ns	<0.002	<0.002	<0.002	<0.0011	<0.002	ns	0.026

¹ Metals results expressed as total concentrations.
 Units are mg/L for hardness and µg/L for rest except pH.
 ns = not sampled, nt = not tested

California Toxics Rule/Basin Plan Criteria (µg/L)¹

Constituent	California Toxics Rule				Basin Plan ⁴
	Freshwater		Human Health		
	CMC ²	CCC ³	Water & Organisms	Organisms Only	
<i><u>Inorganic:</u></i>					
Arsenic	340	150	none	none	
Chromium (total) ^{5,6}	260	34	none	none	
Copper ⁵	5.5	4.0	1,300	none	
Mercury	none	none	0.050	0.051	
Selenium	none	5.0	none	none	
Thallium	none	none	1.7	6.3	
Zinc ⁵	53	53	none	none	
<i><u>Organic:</u></i>					
Chloroform	none	none	none	none	1,240 ⁷
Toluene	none	none	6,800	200,000	
1,4-DCB	none	none	400	2,600	
beta-BHC	none	none	0.014	0.046	

¹ Expressed as dissolved concentrations.
² Criterion Maximum Concentration (acute toxicity)
³ Criterion Continuous Concentration (chronic toxicity)
⁴ Basin Plan MUN do not apply since Lake Almanor does not have a MUN designation.
⁵ Freshwater criteria based on dissolved concentration at hardness of 39 mg/L.
⁶ Based on CTR criteria for chromium (III).
⁷ Lowest Observed Effects Level (Chronic), National Ambient Water Quality Criteria, Freshwater Aquatic Life Protection.

**Comparison of Maximum Effluent Concentrations with
 Lowest Water Quality Criteria (µg/L)¹**

Constituent	Maximum Effluent Concentration²	Lowest Applicable Water Quality Criterion³	Effluent Limitation Required? (Y/N)
<i><u>Inorganic:</u></i>			
Arsenic	1.6	150	N
Copper	24	4.0	Y
Mercury	0.012	0.050	N
Selenium	0.2	5	N
Zinc	8.9	53	N
<i><u>Organic:</u></i>			
Chloroform	1.6	1,240	N
Toluene	14.6	6,800	N
1,4-DCB	0.6	5	N
beta-BHC	0.026	0.046	N

¹ Constituents not detected in effluent have been omitted.

² Effluent results for inorganic constituents have been adjusted, as applicable, from total to dissolved concentrations using SIP Appendix 3.

³ Based on previous table and Beneficial Uses for Lake Almanor (**note:** MUN is not a listed Beneficial Use).

Based on the above analysis, Regional Board staff have concluded that reasonable potential exists for copper to cause or contribute to an excursion above numeric water quality objectives. As a result, effluent limitations for copper are proposed in the Order.

BASIS OF PERMIT CONDITIONS

Effluent Limitations

Biochemical Oxygen Demand (BOD) and Total Suspended Solids (TSS)

Federal regulations, found in Title 40 Code of Federal Regulations (40 CFR), Part 133, provide technology based effluent limitations for BOD and TSS that are known as “secondary treatment standards.” These federal regulations pertain only to surface water dischargers to Lake Almanor. Pursuant to 40 CFR Sections 133.102(a) and (b), the 30-day average concentration of BOD and TSS for secondary treated effluent shall not exceed 30 mg/L, and the 7-day average shall not exceed 45 mg/L. In addition, the amount of BOD and TSS removed shall be at least 85 percent. Sections 133.101(g) and 133.105 allow relaxed BOD and TSS effluent limitations for treatment consisting of trickling filters or waste stabilization (facultative) ponds provided the 30/45 mg/L secondary treatment standard cannot be met. The following effluent limitations apply for “treatment equivalent to secondary treatment”: 30-day BOD and TSS effluent concentrations shall not exceed 45 mg/L, and 7-day concentrations shall not exceed 65 mg/L; percent removal shall be at least 65 percent. With respect to surface water discharge, the existing permit incorporates secondary treatment for BOD and TSS, except for “treatment equivalent to secondary treatment” for TSS percent removal. The Order does not restrict BOD and TSS concentrations for discharge to the wetland ponds. No changes in BOD and TSS limitations are proposed for this permit renewal cycle.

In the fall of 2001, influent and effluent BOD values at the treatment plant inexplicably increased. For about 18 months, average monthly values for effluent BOD consistently exceeded the secondary treatment BOD standard contained in the existing Order. However, because there were no discharges to Lake Almanor during this time, there were also no effluent violations. In June 2003, Regional Board staff and the Discharger conducted a BOD study, collecting influent and effluent samples weekly over a three-week period and sending the samples to three different laboratories for analysis. These included the Discharger's contract laboratory and two other laboratories, one in Redding, the other in Chico. Results of the study showed the Redding and Chico laboratories to be in close agreement, while the Discharger's laboratory was 40 to 264 percent higher in comparison. Even though the Discharger has not changed laboratories, BOD concentrations have been markedly lower and more in line with expected values since the results of the study became known.

Settleable Solids

The previous Order contained monthly average and daily maximum settleable solids limitations of 0.1 mL/L and 0.2 mL/L, respectively. Suspended solids limitations are in place and measure a similar parameter that is of greater concern to water quality. This Order eliminates the settleable solids limitations. With TSS limitations in place, the settleable solids limitations may be eliminated without a significant reduction in water quality protection.

Total Residual Chlorine

The Basin Plan prohibits the discharge of toxic substances in toxic concentrations. Chlorine, a substance toxic to freshwater aquatic life, is used to disinfect of the effluent. Chlorine can cause toxicity to aquatic organisms when discharged to surface waters. USEPA recommends, in their *Ambient Water Quality Criteria for the Protection of Fresh Water Aquatic Life*, that chlorine concentrations not exceed 0.02 mg/L as a 1-hour average and 0.01 mg/L as a 4-day average. The use of chlorine as a disinfectant in the wastewater treatment process presents a reasonable potential that it could be discharged in toxic concentrations. Effluent limitations for chlorine have been included in the Order to protect the receiving stream aquatic life beneficial uses. The effluent limitations have been established at the USEPA recommended ambient water quality criteria for chlorine. Compliance may be based on a one-hour average or discrete samples. This compliance method allows for continuous monitoring anomalies while protecting aquatic organisms against toxicity. In order to consistently comply with the new limitations when discharging to Lake Almanor, the Discharger will have to install and operate dechlorination equipment. This Order allows the Discharger until 1 October 2005 to comply with the more restrictive limitations.

In the effluent limitations and monitoring requirements, chlorine is referred to as "total residual chlorine" to remove any ambiguity about whether to measure for "free residual chlorine," "combined residual chlorine," "total residual chlorine." Any approved test method capable of quantifying total residual chlorine at 0.01 mg/L or less is acceptable.

Total Coliform Organisms

The Basin Plan establishes that fecal coliform in waters with a beneficial use of contact recreation may not exceed a geometric mean of 200 MPN/100 mL with no more than 10 percent of samples exceeding 400 MPN/100 mL. The limitation is based on a minimum of five samples collected over a

30-day period. This Order requires a monthly median total coliform limitation of 23 MPN/100 mL and a daily maximum limitation of 500 MPN/100 mL for effluent discharged to Lake Almanor. This level is thought to be adequately protective of receiving water beneficial uses and is consistent with the previous Order.

pH

The Basin Plan provides that the pH of surface waters shall not be depressed below 6.5 nor raised above 8.5 nor shall the discharge alter pH of the receiving water more than 0.5 units. Federal regulations at 40 CFR 133.102(c) require that the pH of secondary treatment remain in the range of 6.0 to 9.0 pH units. Accordingly, this Order requires the pH of the effluent to be maintained within the limits of 6.0 and 9.0 pH units.

Copper

Final Limitations

Based on analytical results of effluent and receiving water samples collected by the Discharger, Regional Board staff have determined that the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR standards for copper. Therefore, effluent limitations for copper are included in the Order.

The following are the steps, as presented in Section 1.4.B of the SIP, to calculate the effluent limitations for copper at a hardness of 39 mg/L:

Step 1 - Determine constituents requiring effluent limitations.

CTR criteria, for certain metals, are a function of receiving water hardness. The USEPA recommends conversion factors to convert dissolved concentrations to total concentrations. The USEPA conversion factor for copper in freshwater is 0.960 for both the acute and the chronic criteria. The criteria are criterion maximum concentration (CMC) and criterion continuous concentration (CCC).

For acute:

$$CMC_{\text{dissolved}} = (0.960) * e^{(.9422 * \ln(\text{hardness}) - 1.700)}$$

$$CCC_{\text{dissolved}} = (0.960) * e^{(0.8545 * \ln(\text{hardness}) - 1.702)}$$

Using the minimum receiving water hardness submitted by the Discharger (39 mg/L) yields the following criteria:

$$CMC_{\text{dissolved}} = 5.5 \mu\text{g/L}$$

$$CCC_{\text{dissolved}} = 4.0 \mu\text{g/L}$$

Since no site specific translator is available to convert from dissolved to total recoverable, the USEPA conversion factor is used, which is the same for both chronic and acute (0.960):

$$CMC_{\text{total}} = CMC_{\text{dissolved}} / 0.960 = 5.5 \mu\text{g/L} / 0.960$$

$$CCC_{\text{total}} = CCC_{\text{dissolved}} / 0.960 = 4.0 \mu\text{g/L} / 0.960$$

$$CMC_{\text{total}} = 5.7 \mu\text{g/L}$$

$$CCC_{\text{total}} = 4.2 \mu\text{g/L}$$

Step 2 - Calculate the Effluent Concentration Allowance (ECA).

$ECA = C + D(C-B)$, when $C > B$ where C = criterion, D = dilution credit and B = receiving water concentration.

However, D (dilution credit) is equal to zero. Therefore, $ECA = C$.

ECA (acute) = 5.7 $\mu\text{g/L}$

ECA (chronic) = 4.2 $\mu\text{g/L}$

Step 3 - Calculate the Long Term Average discharge condition (LTA).

Because there are less than 10 samples, assume Coefficient of Variation (CV) = 0.6

From Table 1:

ECA Multiplier (acute - 99th percentile) = 0.321

ECA Multiplier (chronic - 99th percentile) = 0.527

LTA (acute) = ECA (acute) x ECA Multiplier (acute) = 5.7 $\mu\text{g/L}$ x 0.321 = 1.84 $\mu\text{g/L}$

LTA (chronic) = ECA (chronic) x ECA Multiplier (chronic) = 4.2 $\mu\text{g/L}$ x 0.527 = 2.20 $\mu\text{g/L}$

Step 4 - Select the lowest (most limiting) LTA

Use the lowest LTA. Therefore, **$LTA = 1.84 \mu\text{g/L}$** .

Step 5 - Calculate water quality-based effluent limitations for aquatic life using the LTA and LTA multipliers. MDEL is the maximum daily effluent limitation. AMEL is the average monthly effluent limitation.

Again using a CV of 0.6, the LTA multipliers from Table 2 are:

MDEL multiplier (99th percentile) = 3.11

AMEL multiplier (95th percentile, n=4) = 1.55

$MDEL = LTA$ x $MDEL$ multiplier = 1.84 $\mu\text{g/L}$ x 3.11 = 5.7 $\mu\text{g/L}$

$AMEL = LTA$ x $AMEL$ Multiplier = 1.84 $\mu\text{g/L}$ x 1.55 = 2.9 $\mu\text{g/L}$

Step 6 - The human health criterion for copper is 1,300 $\mu\text{g/L}$ (water & organisms). There is no CTR criterion for organisms alone. The AMEL for human health is equal to the ECA for human health which, because dilution is zero, is C (1,300 $\mu\text{g/L}$). The MDEL for human health is calculated as follows: $MDEL = ECA$ x ratio of MDEL multiplier to AMEL multiplier. From Table 2:

$MDEL = 1,300 \mu\text{g/L}$ x 2.01 (multiplier for CV=0.6 and N=4) = 2,600 $\mu\text{g/L}$

Step 7 - Choose the most limiting AMELs and MDELs as effluent limitations.

Final effluent limitations for copper are (for a hardness of 39 mg/L):

$MDEL = 5.7 \mu\text{g/L}$

$AMEL = 2.9 \mu\text{g/L}$

Final effluent limitations for other receiving water hardness values are presented in Attachment B of this Order.

Interim Limitations

Interim limitations are established when compliance with NTR- and CTR-based Effluent Limitations cannot be achieved by the existing discharge. The Order includes a compliance schedule that gives the Discharger until 60 months after adoption of this Order (the entire permit period) to achieve compliance with the final effluent limitation for copper or to justify another final effluent limitation to be incorporated upon renewal of the permit. Because the compliance schedule exceeds one year, the SIP requires interim effluent limitations (Section 2.1). This Order therefore establishes interim effluent limitations for copper effective upon adoption of the Order. The SIP, Section 2.2.1, states that interim effluent limitations must be based on “. . . *current treatment facility performance or on existing permit limitations, whichever is more stringent.*” Because there is no existing effluent limitation on copper, the interim effluent limitations are based on current treatment facility performance. Finding No. 26 describes the rationale for setting interim effluent limitations in this Order. The daily maximum interim limitation based on 3.11 times the maximum observed effluent copper concentration. The monthly average interim limitation is established as the maximum observed sampling point. Therefore, the average monthly interim limitation is 25 µg/L (0.16 lbs/day) and the maximum daily interim limitation is 78 µg/L (0.49 lbs/day). Provision H.6. discusses the conditions under which the interim limitations apply.

Flow Limitations

The existing Order limits the 30-day average daily dry weather discharge flow to 0.75 million gallons. No changes are proposed to this flow limitation.

Toxicity Limitations

The Basin Plan requires that all waters be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life. This Order contains an acute toxicity effluent limitation which states, “Survival of aquatic organisms in 96-hour bioassays of undiluted waste shall be no less than:

- Minimum for any one bioassay -----70%
- Median for any three or more consecutive bioassays -----90%”

The monitoring and reporting program requires analysis for pH, ammonia, and temperature to be performed concurrent with each semi-annual acute toxicity bioassay. This Order also requires monitoring for chronic toxicity once during the life of the permit.

COMPLIANCE SCHEDULE

The effluent limitations for copper are based on water quality criteria contained in the National Toxics Rule and California Toxics Rule. This Order allows a time schedule for full compliance with these effluent limitations. Interim effluent limitations included in this Order for copper are applicable upon adoption of this Order and during the period of the time schedule, provided the Discharger

submits, by **1 November 2004**, a written justification that the compliance time schedule is needed. Within **12 months** of adoption of this Order, the Discharger shall either (1) submit a workplan for reducing the concentrations of pollutants in the discharge to levels that will comply with the final effluent limitations, or (2) submit a workplan(s) for studies that will prove that the final effluent limitations should be modified based on site-specific conditions. The Discharger must take such actions necessary to comply with the final effluent limitations. The Regional Board may reopen this Order and modify the final effluent limitations if appropriate, based on results of studies the Discharger may conduct.

SLUDGE DISPOSAL

This Order contains provisions requiring the Discharger to comply with current federal and state laws and regulations for disposal of sewage sludge. The Discharger is required to report any proposed change in sludge use or disposal practice 90 days in advance of change. The Discharger currently stores sludge onsite; therefore, this Order requires that the Discharger submit a sludge disposal plan.

RECEIVING WATER LIMITATIONS

The receiving water limitations contained in this Order are based on water quality objectives contained in the Basin Plan for Lake Almanor.

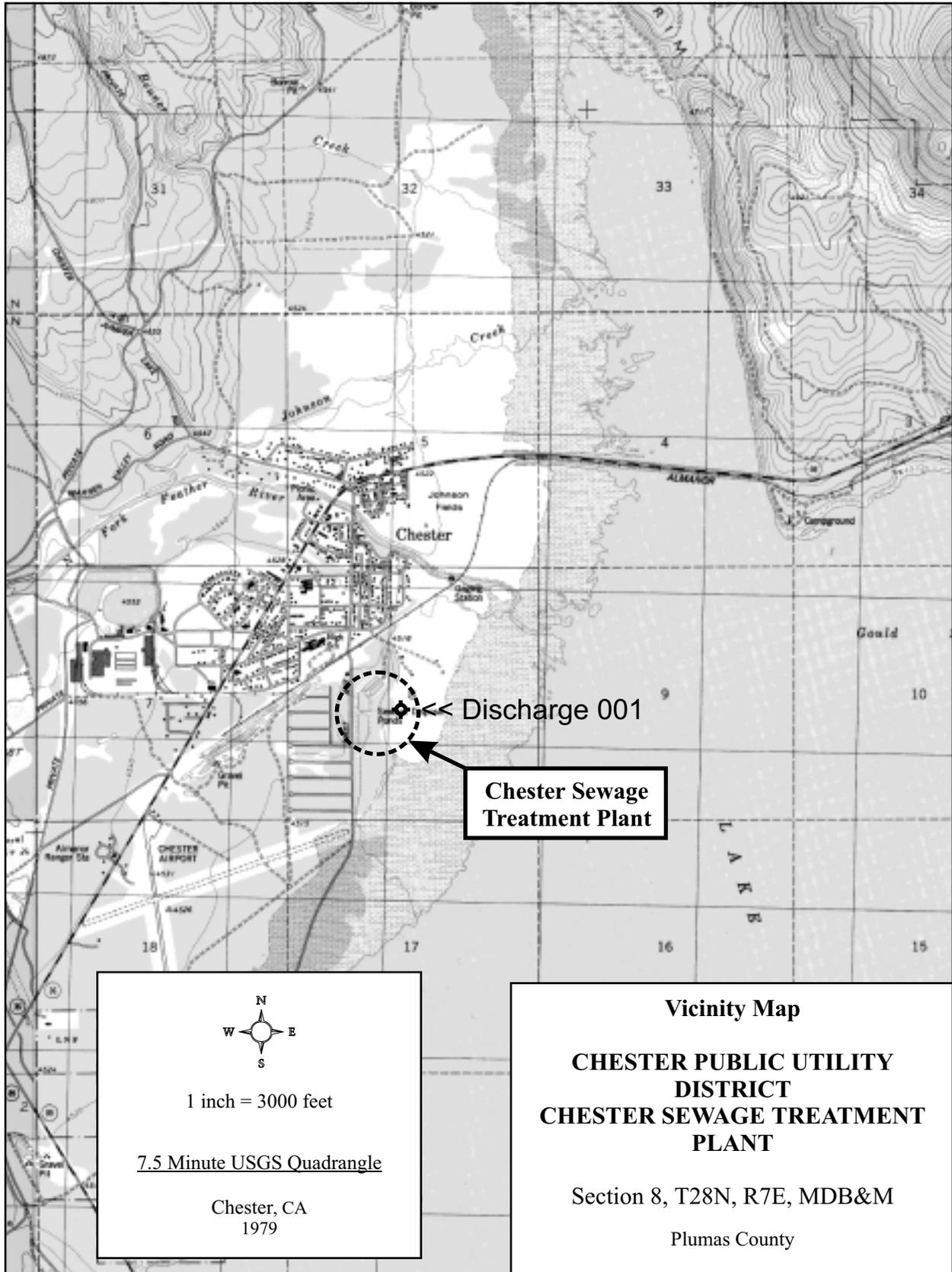
PROCEDURES ON REACHING FINAL DECISION ON DRAFT PERMIT

The tentative waste discharge requirements have been sent to the Discharger and interested parties for review (at least 30 days) prior to formal presentation to the Regional Board. Any contested items on the Order will be heard and considered for change prior to formal adoption at the Board Meeting.

FOR FURTHER INFORMATION

For further information or questions regarding the NPDES permit, contact Ray Bruun at the Regional Water Quality Control Board in Redding at (530) 224-3249.

RB: sae



Discharge 001
Chester Sewage Treatment Plant

N
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1 inch = 3000 feet

7.5 Minute USGS Quadrangle

Chester, CA
1979

Vicinity Map

CHESTER PUBLIC UTILITY DISTRICT
CHESTER SEWAGE TREATMENT PLANT

Section 8, T28N, R7E, MDB&M
Plumas County

SIP Section 1.4 Maximum Daily Effluent Daily Effluent Limitations (MDELs) and Average Monthly Effluent Limitations (AMELs) as Total Copper Using CTR Water Quality Hardness-Dependent Values of Criterion Maximum Concentrations (CMCs) and Criterion Continuous Concentrations (CCCs) for the Protection of Freshwater Aquatic Life						
Upstream Receiving Water Hardness (mg/L as CaCO ₃)	CMC _{dissolved} ¹ 1-hour Average (µg/L)	CCC _{dissolved} ² 4-day Average (µg/L)	LTA ³ (acute) (µg/L)	LTA ⁴ (chronic) (µg/L)	MDEL ⁵ (µg/L)	AMEL ⁵ (µg/L)
<21	Must Calculate					
21	3.1	2.4	1.04	1.32	3.2	1.6
22	3.2	2.5	1.07	1.37	3.3	1.7
23	3.4	2.6	1.14	1.43	3.5	1.8
24	3.5	2.6	1.17	1.43	3.6	1.8
25	3.6	2.7	1.2	1.48	3.7	1.9
26	3.8	2.8	1.27	1.54	3.9	2
27	3.9	2.9	1.3	1.59	4	2
28	4.1	3	1.37	1.65	4.3	2.1
29	4.2	3.1	1.4	1.7	4.4	2.2
30	4.3	3.2	1.44	1.76	4.5	2.2
31	4.5	3.3	1.5	1.81	4.7	2.3
32	4.6	3.4	1.54	1.87	4.8	2.4
33	4.7	3.5	1.57	1.92	4.9	2.4
34	4.9	3.6	1.64	1.98	5.1	2.5
35	5	3.7	1.67	2.03	5.2	2.6
36	5.1	3.7	1.71	2.03	5.3	2.7
37	5.3	3.8	1.77	2.09	5.5	2.7
38	5.4	3.9	1.81	2.14	5.6	2.8
39	5.5	4	1.84	2.2	5.7	2.9
40	5.7	4.1	1.91	2.25	5.9	3
41	5.8	4.2	1.94	2.31	6	3
42	5.9	4.3	1.97	2.36	6.1	3.1
43	6.1	4.4	2.04	2.42	6.3	3.2
44	6.2	4.4	2.07	2.42	6.4	3.2
45	6.3	4.5	2.11	2.47	6.6	3.3
46	6.5	4.6	2.17	2.53	6.7	3.4
47	6.6	4.7	2.21	2.58	6.9	3.4
48	6.7	4.8	2.24	2.64	7	3.5
49	6.9	4.9	2.31	2.69	7.2	3.6
50	7	5	2.34	2.74	7.3	3.6
51	7.1	5	2.37	2.74	7.4	3.7
52	7.3	5.1	2.44	2.8	7.6	3.8
53	7.4	5.2	2.47	2.85	7.7	3.8
54	7.5	5.3	2.51	2.91	7.8	3.9
55	7.7	5.4	2.57	2.96	8	4
56	7.8	5.5	2.61	3.02	8.1	4
57	7.9	5.5	2.64	3.02	8.2	4.1
58	8	5.6	2.68	3.07	8.3	4.2
59	8.2	5.7	2.74	3.13	8.5	4.2
≥60	Must Calculate					

¹ CMC_{Dissolved} (1-hour average) = 0.960 x exp^{(0.9422)(ln hardness)-1.700}

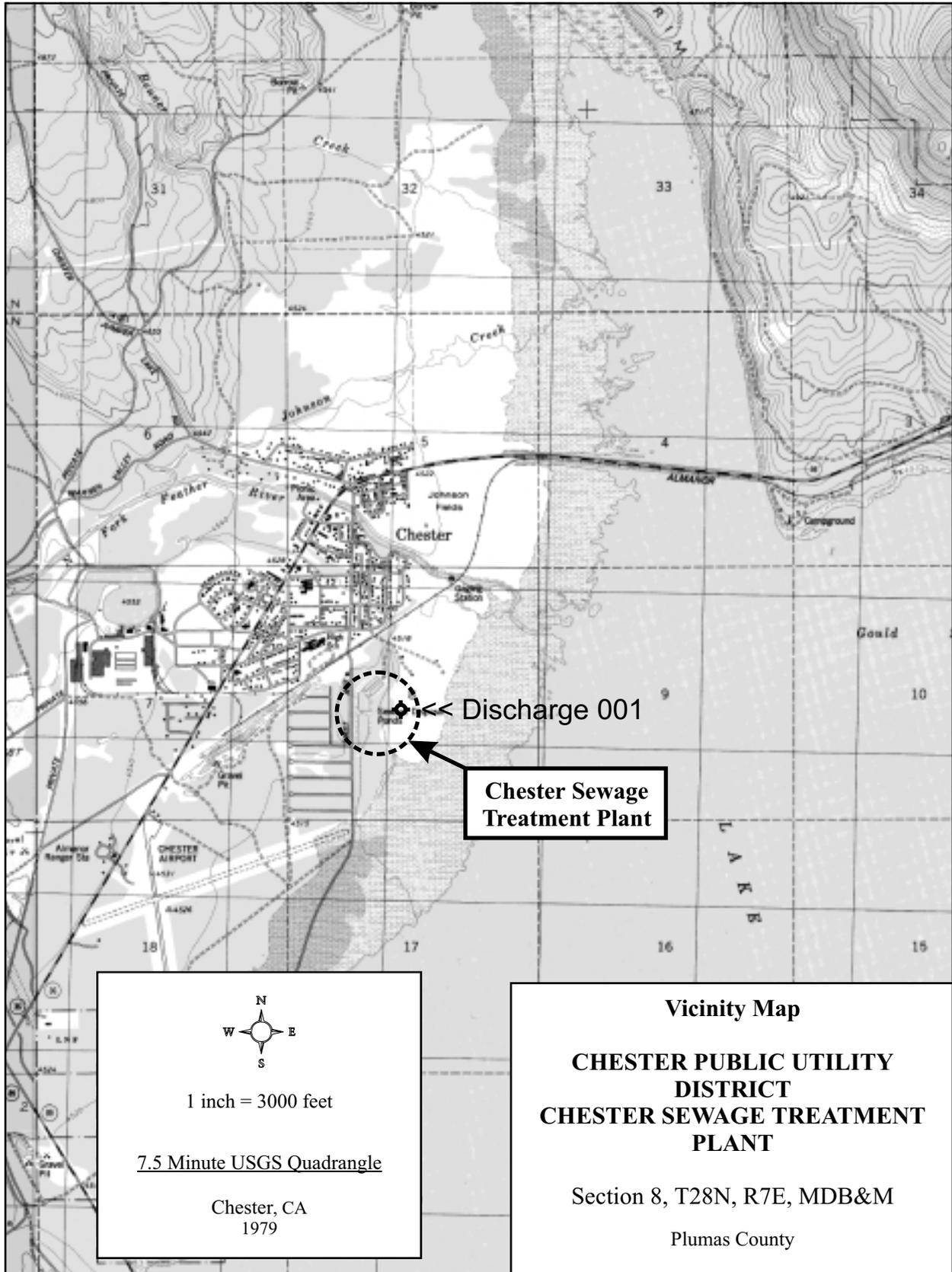
² CCC_{Dissolved} (4-day average) = 0.960 x exp^{(0.8545)(ln hardness)-1.702}

³ LTA_{acute} = ECA x 0.321 (where ECA = CMC_{Dissolved}/0.960)

⁴ LTA_{chronic} = ECA x 0.527 (where ECA = CCC_{Dissolved}/0.960)

⁵ MDEL = LTA_{acute} x 3.11 (use lower of LTA_{acute} and LTA_{chronic})

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54	7.5	5.3	2.51	2.91	7.8	3.9
55	7.7	5.4	2.57	2.96	8	4
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